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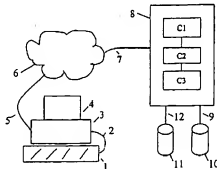
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(54) Title: SYSTEM AND METHOD FOR VALUING PATENTS

(57) Abstract: A computer system implementing a macro economic model based upon macroeconomic data and relative value characteristics data of patents that determines nominal values for (1) goods and services and (2) profits generated by sales that are covered by the rights of a patent, implements an income value theory to value the patent based upon the predicted values of profits or of goods and services covered by the patent, determines patent terms from patent filing, publication, and issue dates, determines patent assignees from patent data, and uses the value of a company's patents, the patent issuance data and term date data, to determine trends versus time in: the number of a company's enforceable patents; the number of a company's patents obtained; the nominal value of net earnings and of goods and services sold that are covered by the company's patents; the nominal value of the sum of the company's patents, and provides comparisons of those trends between companies, regions, and economic sectors, providing the results of the analysis to users of the computer system. The computer system employs a user database enabling payment by affiliates, programmed securities trading, and accrediting of investors.

estimating and rapidly communicating to interested people the effect of a patent portfolio on the value of the organization owning it.

A sixteenth object of the invention is to provide patent value based demographic information.

5 Brief Description of the Drawings

Fig. 1 is a schematic of a novel computer network system implementing the invention;

Fig. 2 is a schematic showing tables of the novel database of Fig. 1;

Fig. 3 is a schematic showing tables of the novel database of Frig. 1;

Fig. 4 is a process flow chart showing the novel steps used to generate data in some of
10 the tables in the novel database of Fig. 1;

Fig. 5 is a schematic of a printout of a patent data report generated by the system of the invention; and

Fig. 6 is a schematic of a printout of a combined financial and patent data report of the invention.

15   Summary of the Invention

Definitions

The fraction of the value of a selected MEI that is due to the sale of goods and services covered by all enforceable patents is defined herein as the Macro Covered Fraction, or MCF of that MEI. The fraction of the value of a selected MEI that is attributable to the sale of goods and
20 services covered by a particular enforceable patent is defined herein as the Covered Fraction, or CF of the MEI for that patent.

Computer Implemented Economic Model

This invention provides a computer system implementing economic models that estimate a CF value for an enforceable patent based at least in part upon the value of a MEI (i.e., an
25 MED) and provides the CF value and valuations based thereupon to a user. The computer system includes at least one digital computer and a database containing patent data. Preferably, the database also contains macro economic data and financial data. The computer system includes programming or hardwired logic which configures the digital computer to use the patent and other data to implement the economic model. For each patent, the economic model can
30 derive CF of an MEI. Preferably, the system uses a macro economic model to derive CF values and patent valuations for substantially all enforceable patents, sums the values by assignee, sector, geographic region, determines trends versus time in the summed values, and extrapolates

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between the CF of GDP for all enforceable patents. For example, in this model, if there are one million enforceable patents, and if the MCF is one trillion dollars per year, then the CF of GDP for each patent is one million dollars (MCF of GDP of one trillion dollars per year divided by one million patents).

5   An alternative to the first model uses the MED fraction of the MEI associated with each sector of the economy, and apportions the MED of a sector of the economy only to patents associated with that sector of the economy. A patent is associated with a defined sector of an economy by correlating the patents USPCS and/or IPCS code directly with a defined sector, or by correlating the patents USPCS and/or IPCS code to a SIC or a NAISC code. The defined
10   sectors may be equal to the sectors defined by the SIC or NAISC codes, or may be defined by sets of SIC or NAISC codes. MEI data for SIC and NAISC codes is readily available. This alternative model granularizes the economy allowing the CF to reflect differences in average value of patents in different technology areas.

          Additionally, the economic model may use historical trends in the MED with a sector to
15   predict the MED associated with the sector at future times, and then use those predicted future MED values in estimating the future value of the CF of a patent in that sector.

          A example of an economic model providing sector dependence assumes (1) that MCF equals the GDP in the sector and (2) that every patent associated with that sector has the same CF of GDP. This model equally apportions the GDP of the sector between the CF of GDP of all
20   enforceable patents associated with that sector. For example, in this model, if there are one thousand enforceable patents associated with the medical devices sector, and if the GDP attributable to the medical devices sector is two billion dollars per year, then the CF of GDP for each associated patent is two million dollars per year (MCF of CF of GDP two billion dollars per year divided by one thousand patents).

25   **Depending Relative Patent Value on Relative Value Characteristics**

          The economic model preferably depends the CF of each patent upon a relative value number. The relative value number is defined as the value of a function of the values for relative value variables of a patent. The relative value variables are measures of relative value characteristics of a patent. The relative value characteristics include (1) characteristics intrinsic
30   to the patent as published, issued, or subsequently amended and (2) extrinsic characteristics. The intrinsic relative value characteristics include (1) "at issue" characteristics and (2) "post issue" characteristics.

The relative value variables based upon "at issue" relative value characteristics include measures of the lengths of data fields in the patent (including the claims, the description or specification, domestic and foreign patents cited, non patent references cited), the number of entries in data fields in the patent (including the number independent claim of each class (classes
5 including method, product, system, composition, manufacture, product by process), the total number of independent claims, the total number of claims, the number of different classes of independent claims (i.e., two if the patent contains method and system claims), the number of domestic and foreign patent cited, number of examples, number of figures, number of domestic and foreign priority claims), and the existence of lack of existence of data fields in a patent
10 (including domestic, Paris Convention, and foreign priority claims, disclaimers, PCT data, pre issue oppositions, appeals, and term extensions), the length of the pendency of the application, and the length of time from the domestic and foreign priority date until issue. The values of these at issue relative value variables each provide an indirect indication of the breadth of the claims and the value of the technology covered by the claims. The net effect of all of the relative
15 value characteristics for a patent are reflected in the relative value number for that patent.

Measures of the length of a claim include the number of characters, words, paragraphs, columns of text, pages of text, number of graphics, or area of text or graphics on a printed or displayed page) or function of values derived from a combination of these measures.

Measures of the length of the description (also called specification) of a patent include
20 the number of characters, words, sentences, paragraphs, columns of text, or pages of text, number of figures, number of examples, number of graphics, area of text and graphics on a printed or displayed page or function of values derived from a combination of these measures.

The relative value variables based upon "at issue" relative value characteristics also include the issuance from a PCT application, regional application, and if issued from a PCT
25 application or regional application, then the number of countries designated in the PCT or regional application.

The relative value variables based upon "at issue" relative value characteristics also include the number and type of cited references cited (United States patents, other national or regional patents, or non-patent references), and the type of patent (such as reissue, utility, design,
30 plant, seed, industrial design, utility model, invention registration, inventor certificate, and examined or unexamined patent).

At issue and at publication relative value characteristics do not include any data

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priority in Japan) * f21(Patent type) * f22(a priority claim in the US patent to a foreign priority
application) * f23 = (Type of patent) or f24(patent value determined by a conventional
valuation process). Each of the functions f1 through f23 attains a value of 1 if there is no data
present (null value) in the corresponding data field. In addition, F= f24 is f24 contains a value
5 and the function f24 attains a value zero if there is no data present in it (null value).
Alternatively, F is a sum of functions f1 to f23, or equals f24.

    Table 26 is a table containing data relating patent class data to corresponding economic
sector data. Table 26 contains fields that each include a USPCS or IPS class, or both, a
corresponding NAISC or SIC sector code. The patent class forms a unique identification for
10 each record in table 26.

    Table 27 contains records each including: a company name and one or more assignee
names that identify the same entity as the company name. The company name forms a unique
identification for each record in table 27. It should be noted that the patent assignee name in
table 33 and the company name in table 23, for the same legal entity, may not be the same.
15 Assignee names are typically the exact name of a legal entity such as a corporation. In contrast,
the company name associated with company financial data maybe an abbreviation or alteration
of the actual recorded legal name of the corporate entity. However, simple database query and
select rules may be used to automatically obtain an accurate correspondence for entities between
their assignee name in table 21 and company or "stock name" in table 24, and that table may be
20 visually reviewed and corrected for any inaccurate correspondences. For example, company
name and assignee names may be automatically corresponded by assuming the following rules:
the first word in the company name is the same as the first word in the assignee name, and the
first four letters of the second word in the company name are the same as the four three letters in
the second word in the assignee name, and the first two letters in the third word in the company
25 name are the same as the first two letters in the third word in the corresponding assignee name.
These criteria can be used to reliably match up the assignee and stock or company names
corresponding to the same entity. Data identifying wholly owned subsidiaries is available from
government agencies, for instance provided in the United States by the Commerce Department's
free Edger database available on the Web.
30   Table 28 contains fields for relative value characteristics data for each patent, which
include: the number of the claims; the total number of independent claims; the number of
independent method claims; number of independent product claims; number of independent

system claims, number of independent composition claims; number of independent manufacture claims; the number of other types of independent claims; the length of each independent claim; the length of the specification; the number of the figures; the number of the examples; the existence of any foreign priority claim; the existence of a national priority claim; the existence of
5 a Paris Convention claim; the issuance from a PCT application; the number of countries designated in the PCT application; the number of cited national patent references; the number of cited foreign patent references; the number of cited non-patent reference; the time from the priority filing date to the issue date; the time from actual filing date to the issue date; the type of patent (utility, design, reissue, or plant, utility model); existence of post issuance certificate of
10 correction, the existence of a certificate of reexamination, the length of claims in any post issuance certificate, the existence of a notice of litigation involving the patent; the existence of a regulatory review of a product covered by the patent; the number of corresponding foreign patent applications (e.g., a US, PCT, EPC, or Japanese application claiming priority to the same application as the subject patent), the number of related national patents all claiming priority to
15 the same application, and the number of subsequently issued patents citing to the subject patent. The identification of the patent forms a unique identification for each record in table 28.

The length of the claims and the description (also called specification) may be measured as the number of characters, words, lines, or paragraphs. In addition, if the claims or specification include expressions of the formula, graphical, equation, or even sequence type,
20 each such type of expression may be assigned an equivalent length in number of characters, words, or paragraphs. The equivalence is to a heuristically determined equivalent number of characters needed to express the formula, graph, or equation, in words, and is preferable equal to 80 characters. In addition, the length of the claims can be measured by the two dimensional area they each occupy in a printed patent or in screen area on an electronic monitor in an
25 electronically published patent.

The length measure defined herein is a measure of the breadth of the claim since the shorter the claim the less limitations it has and therefore the broader its coverage. However, language claiming alternatives does not follow that rule since the length involved in claiming alternative limitations is longer than the length of claiming a single limitation and therefore the
30 determined length of a claim may be adjusted in an objective way to account for the effect of alternative language on the breadth of a claim. Therefore, alternatively, the existence of alternative language in a claim may be assigned a length value different than the actual language
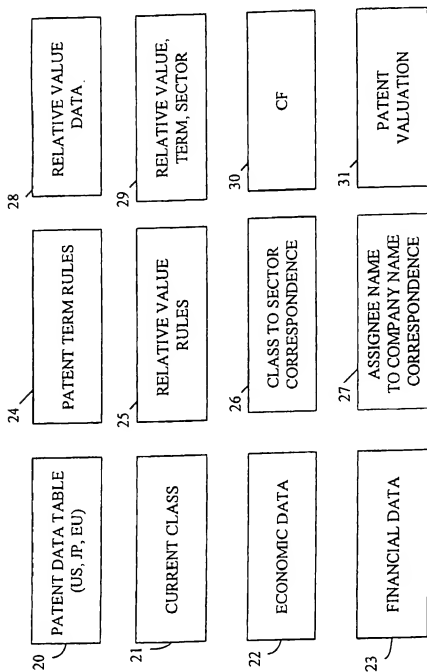
Fig. 2

20 — PATENT DATA TABLE (US, JP, EU)

21 — CURRENT CLASS

22 — ECONOMIC DATA

23 — FINANCIAL DATA

24 — PATENT TERM RULES

25 — RELATIVE VALUE RULES

26 — CLASS TO SECTOR CORRESPONDENCE

27 — ASSIGNEE NAME TO COMPANY NAME CORRESPONDENCE

28 — RELATIVE VALUE DATA

29 — RELATIVE VALUE, TERM, SECTOR

30 — CF

31 — PATENT VALUATION

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 17/60

US CL : 705/1, 10, 22, 24; 707/1, 100

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/1, 10, 22, 24; 707/1, 100

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 5,991,751 A (RIVETTE et al) 23 NOVEMBER 1999 abstract, figure 1, figure 2, figure 6, figure 21, column 1, lines 3-11	1-69, 71-120
Y,P	US 5,999,907 A (DONNER) 07 DECEMBER 1999, abstract, figure 1, column 1, lines 49-60	1-69, 71-120

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier document published on or after the international filing date
"L"	document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed

"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 JUNE 2000	15 AUG 2000

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